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MURPHY CREEK PROJECT

HERITAGE RESOURCES STUDY - STAGE 1

Prepared For

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

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FINAL DRAFT

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SUMMARY

An Inventory - Stage 1 heritage resources study was undertaken for the proposed Murphy Creek Hydroelectric Project. The study area for this proposed project lies along the Columbia River between Trail in the south and the Hugh Keenleyside Dam in the north.

The objective of the study was to provide an overview assessment of heritage resources within the area of the proposed project. The methodology employed in the study included library research; site file search; a random quadrat survey of 50% of the study area; and interviews with local knowledgeable people. Preliminary field survey was conducted in the proposed borrow areas of Murphy Creek, Hanna Creek and Sullivan Creek.

Results of the study show a total of thirty-nine heritage sites have been recorded in the study area. The heritage sites tend to occur in greatest number at or near, the mouths of tributaries to the Columbia River. The mouth of the Kootenay River in particular has the greatest heritage site density for the entire study area.

The heritage sites identified within the study area are primarily archaeological sites of three types. These sites represent the possible remains of winter villages; summer camps; and burials. The proposed hydroelectric project would have the greatest adverse effect on the winter village and burial sites, as these occur at the lowest elevations. A total of twenty-eight sites are endangered by the proposed Murphy Creek Project reservoir.

Historic sites recorded in the study area consists of the abandoned Doukhobor settlement of Blagodatnie near Champion Creek. The cemetery at Blagodatnie appears to have considerable significance for a number of area residents.

1.0 INTRODUCTION

At the request of B.C. Hydro, the Department of Archaeology of Okanagan College contracted to conduct a preliminary study of the heritage resources that might be affected by the proposed Murphy Creek Hydroelectric Project on the Columbia River.

1.1 PROJECT HISTORY AND DESCRIPTION

The hydroelectric potential of the Murphy Creek site was first identified in 1956. Subsequently, preliminary engineering and environmental studies were carried out in 1977 and 1978 (B.C. Hydro 1980).

The Murphy Creek site is located on the Columbia River approximately 3km upstream from the city of Trail and 25km downstream from the confluence of the Columbia and Kootenay rivers (Figure 1). The tentative layout for the project consists of "an earthfill dam, approximately 33m high, extending across the river from the east bank (sic) to a concrete spillway and 10 - unit powerhouse located on the west bank (sic)" (B.C. Hydro, 1980).

The reservoir size at the Full Supply Level will extend to the 424m contour level. The safeline for bank stability within various areas of the proposed reservoir at the 424m level is being determined by Thurber Consultants Ltd. of Victoria.

The proposed borrow areas for the Murphy Creek project have been tentatively outlined along Hanna Creek, Murphy Creek and possibly Sullivan Creek (Figure 7 in pocket). Access routes to the proposed borrow areas have not been determined.

1.2 STUDY SCOPE AND OBJECTIVES

The Stage 1 heritage overview assessment has as its objectives:

a) to identify and assess heritage resource potential or sensitivity within the study area, and

b) to recommend the appropriate methodology and scope for detailed impact assessment studies in Stage 2.

(Heritage Conservation Branch, 1981).

The Inventory - Stage 1 terms of reference as issued by the British Columbia Hydro and Power Authority 1980 (Appendix A) are in part:

1. Summarize relevant information from archaeological, ethnological, ethnohistorical and historical literature.
2. Survey a sample of the areas to be flooded or otherwise affected by construction activities. From the sample estimate the total number of sites within the affected area.
3. Record and map all archaeological and historical sites discovered. Report on the condition, significance and type of each site.

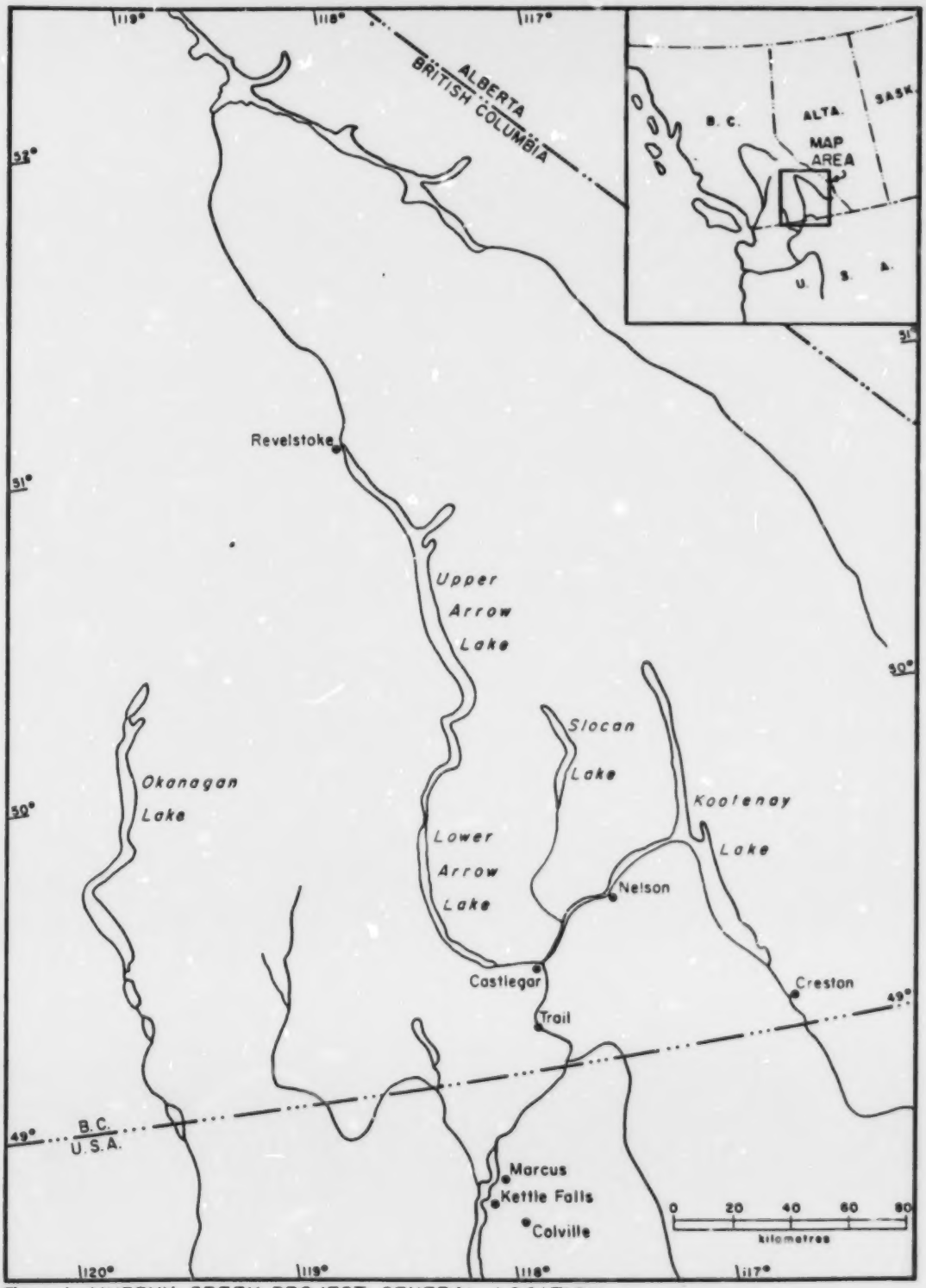

Figure 1. MURPHY CREEK PROJECT GENERAL LOCATION

4. Interpret the patterns found. Include judgements on the richness and uniqueness of the local resource.
5. Report on results of items 1 to 4. Suggest additonal work that may be needed to provide a more detailed inventory of heritage resources contemplated in Inventory - Stage 2...

The terms of reference as determined by B.C. Hydro for the initial study of this area exceed to some extent that which is required by the Heritage Conservation Branch where the Branch says (1981:21) "Background research and preliminary field reconnaissance are the basic research activities at this initial stage in the heritage assessment process."

In any event this Stage 1 study included library research, site file research, general reconnaissance of the study area, an intensive survey of a 50% stratified random quadrat sample of the riverbank area, and preliminary field reconnaissance of the proposed borrow areas.

Interviews with local knowledgeable people were conducted during the ten weeks spent in the study area (Appendix B).

2.0 STUDY AREA

The general region of the study area is situated within the bounds of map coordinates: 49^{o} 02' to 49^{o} 21' North Latitude, and 117^{o}

35' to 117° 47' West Longitude. More specifically the study area (Figure 2) ... consists of all lands on either side of the Columbia River from the axis of the proposed dam in the vicinity of Oasis, upstream to the Hugh Keenlyside dam on the Columbia River and to the Brilliant dam on the Kootenay River, up to an elevation of 500m (B.C. Hydro, 1980).

The west side of the Columbia River has the greatest amount of modern settlement. The city of Trail is to the south, small towns of Rivervale, Oasis, Genelle, China Creek and Blueberry occur along the road north to the city of Castlegar. The large pulp and sawmill complex is 5km north of Castlegar. The transportation corridor of railway and highway is on the west side of the Columbia River.

The east side of the Columbia River in the northern part of the study area contains the settlement of Robson, with Brilliant to the south, Ootischenia is the area around the Castlegar Airport, there are no roads or settlements on the east side of the Columbia River south of Champion Creek.

2.1 PHYSIOGRAPHY

The study area falls within the Columbia Mountains division of the Interior Plateau of British Columbia. The Columbia Mountains constitute a highly mountainous area 160 miles wide and 380 miles long in the southeastern interior of the Province (Holland, 1964:76). The

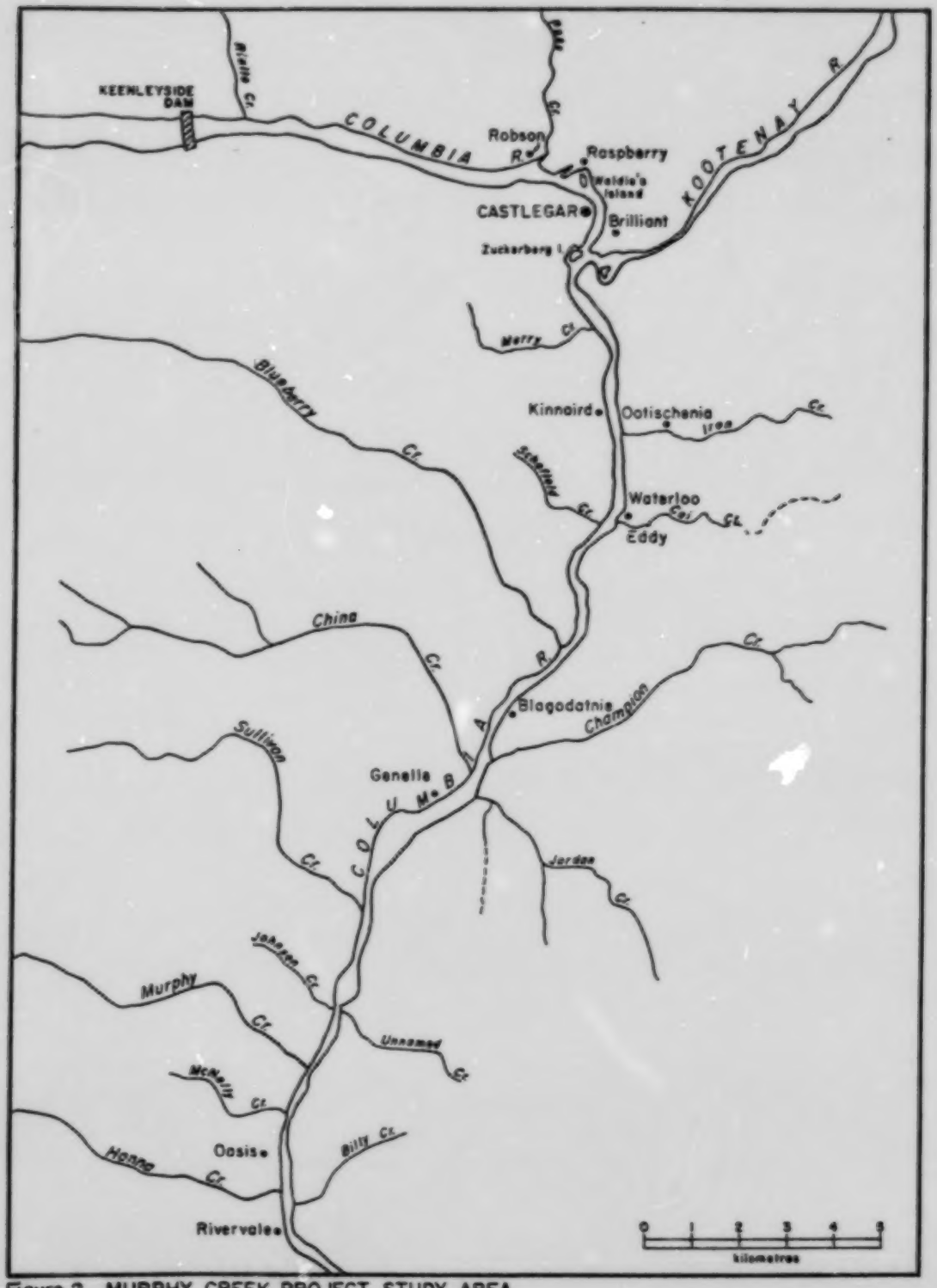

Figure 2. MURPHY CREEK PROJECT STUDY AREA

Cariboo, Monashee, Selkirk and Purcell Mountains make up the Columbia Mountains division. The Monashee and Selkirk Mountains are specific to the study area.

The Monashee mountains occupy an area lying between the Selkirk mountains on the east and the Okanagan Highlands on the west. The boundary with Selkirk mountains is along the Columbia River - Arrow Lakes valley (Holland, 1964:77).

The Selkirk mountains lie within the big bend of the Columbia River and are flanked on the west by the Monashee mountains and on the east by the Purcell mountains. The boundary with the Monashee mountains is along the valley which is occupied by the Columbia River and the Arrow Lakes (Holland, 1964:78).

The west bank of the Columbia river then is in the Monashee mountains, while the east bank is in the Selkirk mountains. Both ranges are geologically and topographically very much alike. The highest peaks are in the northernmost part of both the Monashee and Selkirk mountains. The amount of relief is governed by the elevations at which the rivers are flowing, and these in turn are controlled by various lake levels.

The overall topography is characterized by mountainous terrain of high relief with narrow river valleys offering the most suitable terrain for habitation.

2.2 FLORA

The study area is in a transition area between Krajina's (1969) Interior Douglas-fir zone and Interior Western Hemlock zone. Turnbull (1977) would place the study area in the Interior Douglas-fir zone, while Turner, Bouchard and Kennedy (1980) place the study area in the Interior Western Hemlock zone. A third biogeoclimate zone of Krajina (1969) might also be represented in part of the study area by the Ponderosa Pine zone.

The major trees encountered in the study area include ponderosa pine (Pinus ponderosa), lodgepole pine (Pinus contorta), white pine (Pinus monticola), Douglas-fir (Pseudotsuga menziesii), grand fir (Abies grandis), western larch (Larix occidentalis), western hemlock (Tsuga heterophylla), western red cedar (Thuja plicata), trembling aspen (Populus tremuloides), black cottonwood (Populus balsamifera), western birch (Betula occidentalis) and paper birch (Betula papyrifera).

The more significant associated plants in the study area are saskatoon berry (Amelanchier spp.), chokecherry (Prunus virginiana), huckleberry (Vaccinium spp.), hawthorn (Crataegus douglasii), syringa (Philadelphus lewisii), and hazelnut (Corylus californica). Camas (Camassia quamash) was observed in the study area but not in great quantity.

2.3 FAUNA

Aspects of the study area habitat will be reported upon by other consultants. Only brief comment will be made here on faunal resources that might have influenced prehistoric settlement patterns.

Possible important faunal resources include whitetail deer (Odocoileus virginianus), mule deer (O. hemionus), black bear (Ursus americanus), marmot (Marmota spp.), beaver (Castor canadensis) and ground squirrel (Citellas columbianus). All of the above were observed during the course of the heritage resource survey in the study area.

At the higher elevations are elk (Cervus canadensis), mountain goat (Oreamoris americanus), caribou (Rangifer tarandus), mountain sheep (Ovis canadensis) and grizzly bear (Ursus horribilis) all of which were probably important resources in the past (Turnbull, 1977).

The Columbia River at one time had large runs of anadromous salmon. Sockeye, spring and coho (Oncorhynchous spp.), all made annual runs up the Columbia River, at least as far as the Arrow Lakes and tributary streams (Turnbull, 1977). Rainbow trout and kokanee are resident in this part of the Columbia River as are whitefish and suckers. Fish probably formed a considerable part of the diet of the early inhabitants of the area.

2.4 ETHNOGRAPHY

The study area falls within the boundaries of the former territory of the Lakes Salish (Figure 3). There is some dispute among ethnographers as to the exact boundaries of Lakes Salish territory. The most recent ethnographic work has been by Bouchard and Kennedy (1979). Referring to the Lakes Salish, they say:

> ... the area utilized by the Lakes formerly extended as far north as the vicintiy of Revelstoke utilizing an area bounded in the west by the mountains that are immediately west of the Kettle River from its mouth upriver to Cascade... and immediately west of Christina Lake in British Columbia, also immediately west of the Lower and Upper Arrow Lakes in British Columbia; in the east... the area formerly utilized by the Lakes was bounded by the mountains immediately east from the Columbia River and immediately west from Slocan Lake. As far as the southern boundary is concerned... "anything north of Kettle Falls has always been Lakes" both along the Columbia River and along the lower Kettle River (Bouchard and Kennedy, 1979:15).

Teit (1930) lists twenty-three Lakes Salish villages along the Columbia River from Revelstoke in the north to the confluence of the Columbia and Kettle rivers in the south. Of particular interest is Teit's description of village 9 called "Qepi'tles". He says:

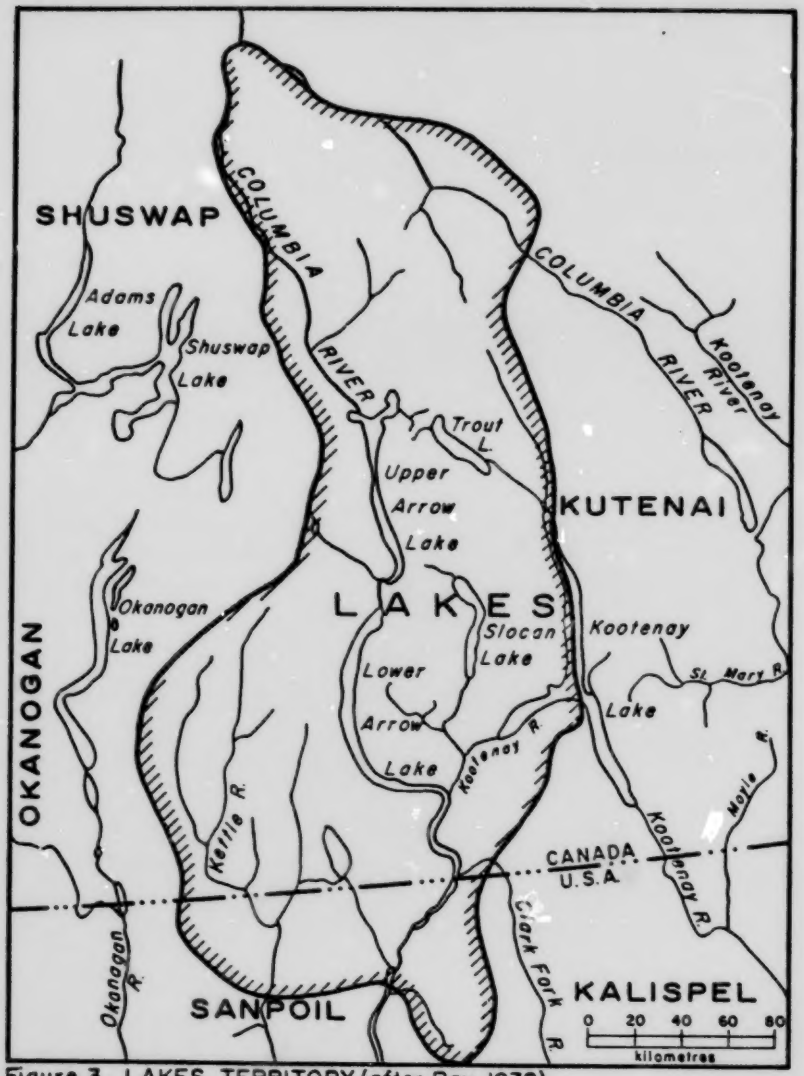

Figure 3. LAKES TERRITORY (after Ray 1932).

> ... at the mouth of the Kootenai River, just above the junction with the Columbia. A great many people lived here formerly, most of them on the north bank of the Kootenai, within sight of the Columbia. Some old and modern burial grounds may be seen in the neighborhood (Teit, 1930:209).

From the above description, Qepi'tles would appear to be the site described later in this report under the Borden designation of DhQj 1.

Teit did his field work among the Salish Tribes of the Plateau in 1904, 1908 and 1909. His discussion of Interior Salish population is based on total numbers at that time. Referring to the Lakes Salish population Teit says:

> According to the Indians, the population of the tribes long ago was at least about four times greater than it is at the present day. Probably the Lake tribe alone must have numbered 2,000 or more. A conservative estimate of their 20 village communities in British Columbia, allowing an average of 50 persons to each, would give 1,000; but this is probably a very low estimate, as some winter camps are credited with a population of from 100 to 200 people. The

> villages in Washington are said to have been larger than those farther north, although fewer in number. The lower part of the tribe, although occupying a small area in comparison with the tribal territory in British Columbia, is said to have numbered as many people as the whole 20 villages in British Columbia. This would give the number of the tribe as at least 2,000 (Teit, 1930:211).

The Lakes Salish have not received a great deal of specific ethnographic attention. Teit's (1930) studies were peripheral as were Ray's (1932, 1936, 1939). More recenlty Bouchard and Kennedy (1979) using ethnographic, ethnohistoric and linguistic data have shown the Lakes Salish to be a part of the larger Okanagan Tribal group (Figure 4).

Teit groups all of the Plateau Salish together in his discussion of subsistence techniques. He compares all other groups to the Thompson people with whom he spent the most time. Referring to the Interior Salish in general Teit says:

> The food of the Okanagan tribes differed but little from that of the Thompson. The proportions of the different foods used were about the same, as well as the methods of collection. Nearly all the families moved

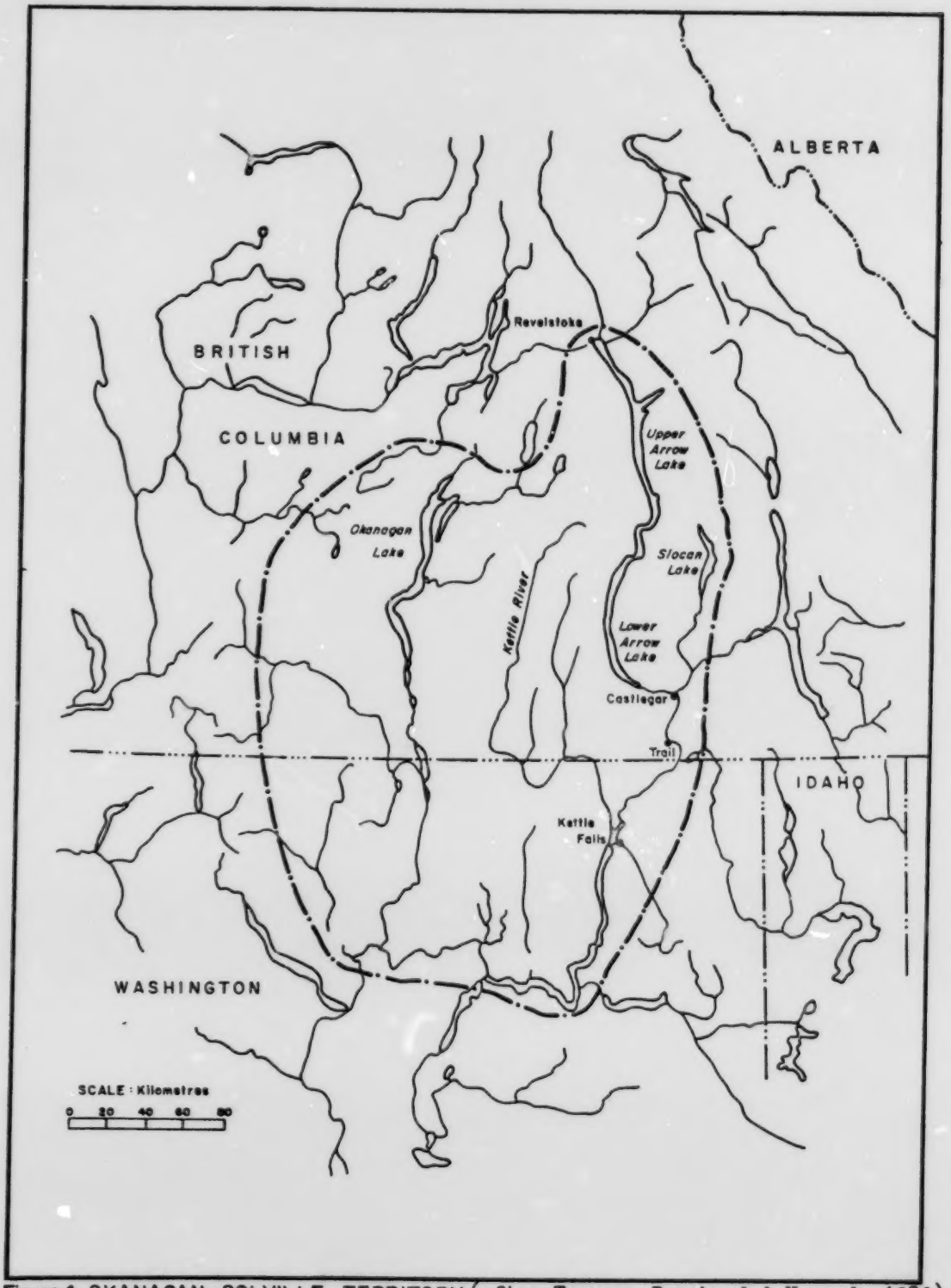

Figure 4. OKANAGAN-COLVILLE TERRITORY (after Turner, Bouchard & Kennedy 1980)

about a good deal from one place to another, within their respective tribal territories, fishing, hunting, rootdigging, and berrying, according to the season at which each principal item of food supply was at its best. Usually each band was able to procure a sufficiency of all kinds of food on its own particular grounds; but some families occasionally, and others regularly, went farther afield into the remotest parts of the tribal territory, hunting and trapping. Some other families who did more or less trading made regular trips to certain tribal and intertribal rendezvous, passing through parts of the territories of other tribes... In some parts of the country the chief means of sustenance was hunting, in other parts fishing, while in many places these two were of about equal importance (Teit, 1930:237).

The Sanpoil - Nespelem people, Salish speakers whose territory borders the Lakes Salish on the southwest, have been thoroughly described by Ray (1932). The Lakes Salish probably were similar in many respects to their Salish neighbours. The Sanpoil and Nespelem winter dwelling was the semi-subterranean earth lodge. Ray says:

> ... The semi-subterranean earth lodge consisted of a circular pit with a flat or conical roof. The depth of the pit varied from four to six feet; a deep pit was necessary for the flat roof type. The diameter ranged from ten to sixteen feet... (Ray, 1932:31).

Turnbull (1977) considers the Lakes Salish to be marginal participants of the Plateau Culture of Western North America. The Plateau Cultural Area as defined by Turnbull (1977) includes that area between the Coast Mountains on the west and the Rocky Mountains on the east, and approximately between 45^{o} and 55^{o} north latitude.

The Plateau Culture Type describes semi-sedentary people whose subsistence is based on hunting, fishing, and gathering. It is generally accepted that the aboriginal yearly round consisted of root-digging and gathering in the spring; fishing in the summer; hunting in the fall; and remaining fairly sedentary in the winter living on stored foods. The Lakes Salish would be included in this general description of Plateau Culture, although for Turnbull not as full participants.

2.5 ARCHAEOLOGY

The archaeology of the Columbia River area has received considerable attention south of the study area. Collier, Hudson and Ford (1942)

report on work done from the Grand Coulee Dam, upstream to the international boundary. They say:

> Three major types of archaeological evidence were found by our survey in the upper Columbia region, namely, habitation sites, shell heaps, and cemeteries. A few pictographs and petroglyphs were found... Burials were of two types, rock slide burial and sand or gravel pit burials... Large numbers of artifacts of stone, bone and shell were found in habitation sites and to an even greater extent in burials. Practically confined to burials were the carefully worked celts and mauls, stone pipes, shell ornaments, and the more elaborate implements and ornaments of bone. Stone projectile points, pestles and hammerstones, and quartzite scrapers were distributed widely on the surface, as well as in habitation sites and graves (Collier, Hudson and Ford, 1942:110).

Farther south at The Dalles, Oregon; Cressman et al (1960) report on 11,000 years of occupation for that part of the Columbia River. Cressman has developed a three period chronology based on C-14 dates and typology. A summary of The Dalles chronology follows:

> The Early Period - (11,000 to 7,500 years ago) is characterized by a rich bone and antler

industry, burins, bolas, core-and-blade technology... great numbers of salmon vertebrae... projectile points, most of which are non-stemmed or have a stem tapering to a pointed or slightly rounded base... The compound atlatl and the boat-shaped atlatl weight were in use. The use of red ochre suggests ceremonial activity. Lithic products were uniformly of a very high quality of craftmanship.

The Transitional Period - (7,500 to 5,000 years ago) Choppers, cutting tools, and projectile points and knives make up the bulk of the deposits... Evidence indicates that fishing continued by use of nets...

The Late Period - (6,000 years ago to contact). ... this last period is characterized by an exuberant development of stone sculpture, of carving and incising of bone, and of a range in varieties and quality of fabrication of projectile points probably unequalled in the Far West... There were carved mortars and pestles, bone carved with representative and abstract designs, animals sculptured in stone, elaborate petroglyph designs, nipple-top mauls, pipes, beads and so on... The

> production of ceremonial and art objects in the Late Period beyond those things needed for subsistence parallels the situation in the Early Period and indicates that the economy in these periods was sufficient to provide a social surplus (Cressman, 1977:134).

The way of life at The Dalles may not have been too different from that of the Lakes Salish in the Kettle Falls region and perhaps to some extent in the study area.

A number of other archaeological excavations have been conducted in the middle Columbia region; particularly Butler (1961, 1962), Osborne et al (1961) and Swanson (1962). All of the above are concerned with the development of Columbia Plateau prehistory which could include the Murphy Creek Project study area.

Archaeological investigations in the more immediate study area began with an archaeological survey of the High Arrow reservoir where seventy-seven sites were recorded by Harrison in 1961. Further work by Mitchell (1965, 1967) and Turnbull (1968, 1969, 1977) led to the identification of 120 sites. Turnbull (1977) places these sites into six major categories: "(1) pit house; (2) non-pit house; (3) burial; (4) pictograph; (5) sweat lodge; (6) historic" (Turnbull, 1977:24).

With limited funds and little time, Turnbull conducted archaeological excavations in that part of the Arrow Lake reservoir where

heritage resources were threatened by higher water levels. In discussing the excavated material, Turnbull says:

> It is very clear that the Arrow Lakes material at hand represents only the later parts of a continuously developing cultural sequence found in other parts of the Plateau. The Arrow Lakes components cluster into two distinct and relatively late occupations, separated at the present state of knowledge by a break in the record. Further research will no doubt fill in the gaps that exist in the archaeology of this region (Turnbull, 1977:103).

The two distinct occupations as seen by Turnbull were named Deer Park Phase and Late Plateau Period (Turnbull, 1977). The characteristic artifacts of the Deer Park Phase which is dated at (3,000 to 1,500 years ago) are:

> ... projectile points of several varieties among which corner notched, parallel stem, expanding stem, and lanceolate are the most popular; triangular and ovoid bifaces; varieties of formed and unformed straight or round end scrapers and concave scrapers; a series of scraper/knives based on a local platey material; gravers; drills; disc beads;

> hammerstones; conical pestles; abrading stones; nephrite adzes; and possibly, microblades (Turnbull, 1977:108).

The Late Plateau Period dated at (A.D. 800 to present) Turnbull says is characterized by:

> ... the developments that terminate with the historic inhabitants of the Arrow Lakes -- the Lake people... The primary artifact forms identified as "late" are the Columbia Valley Corner Notched and the majority of the small side notched projectile points. The small corner notched points are common on sites in the Columbia Plateau beginning after A.D. 300... The sites of this late occupation can be divided into two kinds, burials and camps. However, all evidence is from surface collections except for one excavated component... (Turnbull, 1977:109).

Turnbull concludes his analysis of Arrow Lakes archaeology by saying:

> ... overall, the key Plateau resources are present in the Arrow Lakes but in very small quantities compared to the more southerly

> region of the Columbia Plateau... From the present evidence, admittedly limited, it seems that the resource limitations of the Arrow Lakes have persisted unchanged since the end of the Altithermal, over 4,000 years ago. While the Deer Park phase evidence is based almost solely on the pit houses -- bringing a winter season bias to the sample-- it seems to indicate a resource utilization pattern similar to that of the Lake in historic times (Turnbull, 1977:169).

The time depth of the heritage resources in the study area has not been finally established. Dates from archaeological sites to the south indicate at least 10,000 years of occupation. Cressman says:

> It is now possible to say that the appearance of true Plateau culture is relatively late, occurring certainly after 4,000 years ago. The Fraser Plateau culture, with northern and eastern affinities, provided the base for the regional development of the Fraser Plateau beginning some 7,500 years ago. A regional development starting at least 10,000 years ago on the middle Columbia and lower Snake rivers had passed through its climax by 7,500 years ago. The rejuvenation

> of the culture along the Columbia River after 6,000 years ago evidently resulted in expansion and diffusion of culture northward... (Cressman, 1977:137).

Turnbull (1977) has indicated the types of sites that are encountered in the Arrow Lakes region. The Heritage Conservation Branch has published a site type classification that will be followed in this report. The types of sites that might be encountered in the study area are outlined below:

CIRCULAR AND RECTANGULAR CULTURAL DEPRESSIONS

Simply a surface depression of circular or rectangular shape of varying depth or dimension that might have been a cache pit, house pit, or sweat lodge, etc.

GENERAL ACTIVITY SITE

A locality exhibiting one or more of the following characteristics: a surface distribution of lithic artifacts and or debitage, hearth(s), fire broken rock, ash spreads, calcined bone, shell matrix, burned organic layer with cultural remains...

BURIAL SITE

The interment or other disposition of human remains.

PICTOGRAPH

An aboriginal design or group of designs painted onto a rock surface using natural pigments.

ISOLATED FIND

A material or otherwise visible cultural remnant i.e. artifact, feature, etc., which stands apart or alone from other cultural remains (Guide to the B.C. Archaeological Site Inventory Form n.d.).

All of the above types of site have been recorded in the study area by Harrison (1961) by Robinson and St. Pierre (1973) and by Choquette (1977). The survey done by Choquette was by far the most extensive for the immediate study area. Harrison and St. Pierre appear to have recorded sites reported to them or encountered in passing.

2.6 RECENT HISTORY

David Thompson of the North West Company opened this part of the country to the fur trade at the beginning of the 19th century. The nearest trading posts to the immediate study area were Fort Sheppard south of Trail and Fort Colville near Kettle Falls on the Columbia River. No forts were established within the study area, although the confluence of the Kootenay River with the Columbia would appear to be a likely trade and gathering area.

The area remained somewhat of a backwater until the middle and

latter part of the 19th century when gold and silver was discovered in the surrounding areas. Again the immediate study area saw only minimal placer gold mining activities, but Trail to the south, Slocan to the east and Rossland to the west meant considerable traffic and development within the study area.

Agricultural pre-emptions were later taken up along the Arrow Lakes, Kootenay Lake and Slocan Valley. Considerable effort was expended developing a tree fruit industry. The Doukhobors arrived after the turn of the century to develop even more land for farming. Large tracts of land within the study area were operated as communal farms by the Doukhobors. Light industry in the form of canning plants and jam factories was developed by the Doukhobors at Brilliant within the study area.

The forest industry has had the most recent impact within the study area. Sawmill operations at Castlegar, Brilliant and Robson replaced mining and farming as the major industries for the area. The large pulp and paper mill, and sawmill complex north of Castlegar on the Columbia River is the single major industry within the study area.

3.0 METHODOLOGY

Under the provisions in the Heritage Conservation Act of British Columbia, developmental projects are required to consider the impact the project might have on heritage resources within the proposed project area. A permit to conduct field studies of heritage resources must be obtained from the Heritage Conservation Branch. Accordingly, James Baker of Okanagan College, applied for a permit to undertake a study of heritage resources in the area of the proposed Murphy Creek Project. Verbal permission was obtained for field work in the proposed study area, pending revised permit issuing procedures by the Heritage Conservation Branch.

3.1 LIBRARY AND SITE FILE RESEARCH

The library research was conducted at the Heritage Conservation Branch in Victoria where all pertinent reports concerning previous archaeological work done in the area were obtained. Considerable time was spent reviewing the Archaeological Site Inventory file. Legal land surveys and the Canadian Inventory of Historic Buildings were not reviewed. Further library research was conducted at Selkirk College in Castlegar and at David Thompson University Centre in Nelson, as well as research done at Okanagan College in Kelowna and Cariboo College in Kamloops.

An attempt was made to view all artifact collections that had come from the study area and were held in the Museums at Nelson,

Castlegar, Trail and Colville. Collections held by private individuals were also viewed. Local knowledgeable people were interviewed regarding all heritage sites within the study area (Appendix B).

3.2 PRELIMINARY FIELD RECONNAISSANCE

A general reconnaissance of the entire study area was undertaken to determine ease of access for a more rigorous systematic survey sample as demanded by B.C. Hydro terms of reference. The possible borrow areas of Hanna Creek, Murphy Creek and Sullivan Creek (Figure 7) and possible access routes to them have undergone only preliminary field reconnaissance.

The general reconnaissance of the Murphy Creek Project study area included a preliminary look at land behind the Hugh Keenleyside Dam and to the south of the proposed Murphy Creek Dam site.

3.3 RANDOM SAMPLE SURVEY

The major focus of the Stage 1 Inventory and assessment of heritage resources in the potential impact area of the proposed Murphy Creek Project, was to conduct a random sample survey of 50% of the potential impact area.

The methodology employed by the Okanagan College heritage resource study field crew was to:

1. Define the universe; i.e. delineate as the study area the banks of the Columbia River, from Oasis

to the Hugh Keenlyside Dam, to an elevation of 500m above sea level.

2. Stratify the universe; i.e. divide the study area into East bank of the Columbia River and West bank of the Columbia River.
3. Further stratify the universe; i.e. divide the East bank into creek mouth and non-creek mouth areas, do the same for the West bank.
4. Overlay one thousand metre squares on the creek mouths so that one side parallels the river edge, and so that five hundred metres falls on either side of the creek mouth.
5. Overlay one thousand metre squares to fill the intervening area along the riverbank.
6. Using a table of random numbers draw the stratified 50% random sample as follows (also Figure 5):

   Riverbank West (BW) .. 12, 15, 16, 02, 05, 17, 04, 09, 07.

   Creekmouth West (CW) .. 03, 08, 05, 07, 01.

   Riverbank East (BE) .. 01, 16, 07, 17, 03, 09, 08, 11, 06, 05.

   Creekmouth East (CE) .. 01, 04, 08, 02, 06.

A different column of numbers from the random number table was used for the selection for each strata. Alternate quadrats were not necessary as no problems were encountered with access or permission to survey the quadrats selected. The quadrats were extremely easy to

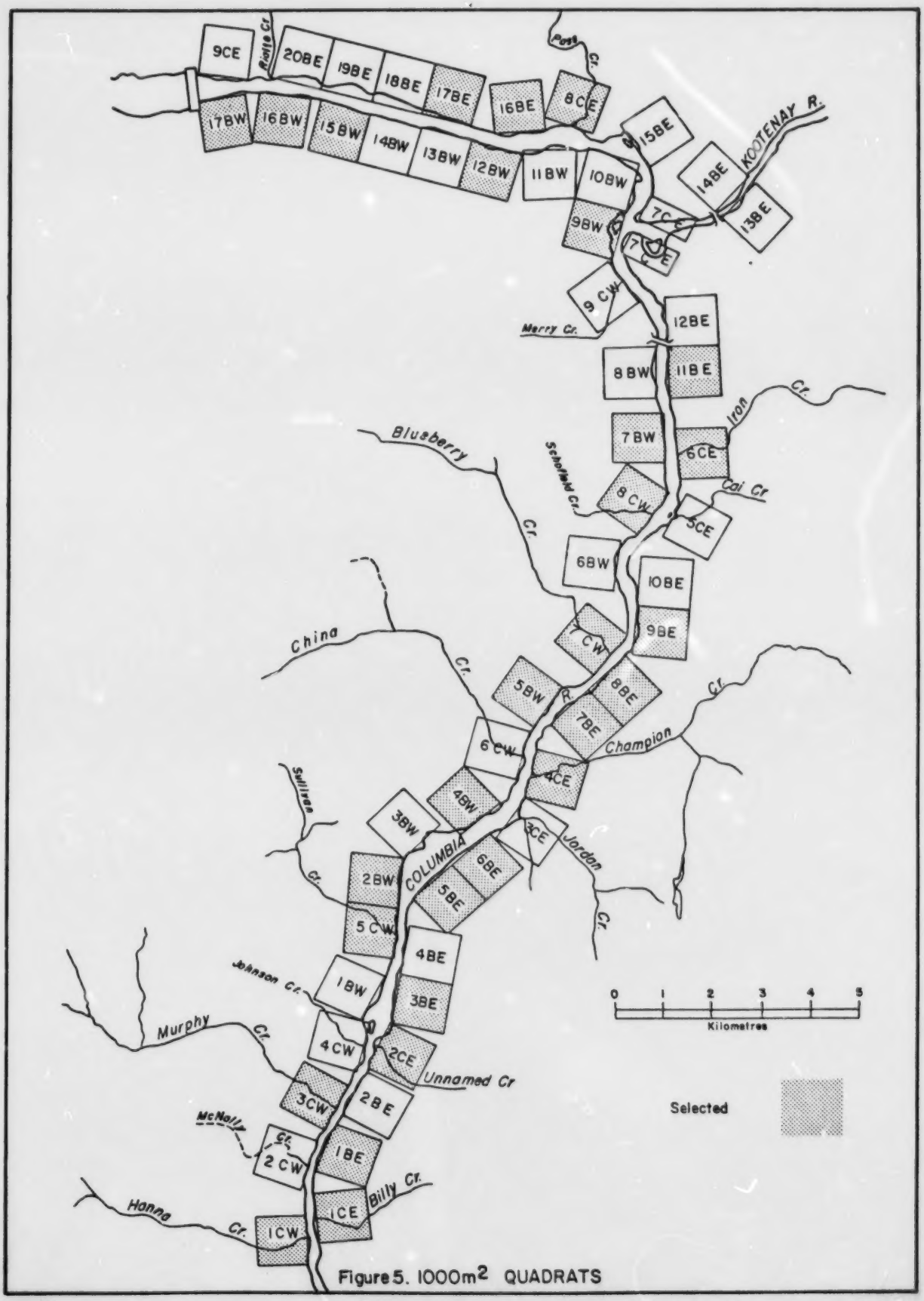

Figure 5. 1000m² QUADRATS

establish on the ground. Topographic features along the Columbia River were readily recognized from the 1 : 50,000 maps of the study area.

The survey procedure was to divide the quadrats into four and walk the entire area. No surface collecting or subsurface testing was done for most of the random sample survey. Sites were recorded on the basis of surface evidence alone. A large number of shallow depression areas which may or may not have been cultural were encountered.

It was decided that at least one of these shallow depression areas would have to be subsurface tested to determine if the depressions were the result of prehistoric cultural activity. An area on the higher terrace at Sullivan Creek was chosen to be tested. The area was easy to get to and was typical of the problematical site areas.

A datum was established on the terrace edge and a 1m square pit (Test A) was laid out in a small depression. A 1m by 2m pit (Test B) was established in a larger, deeper depression. Both test pits were excavated to a depth of 70cm in 10cm levels with the matrix being screened through 5mm mesh. The test sample was small but could be more easily incorporated into larger scale excavations than could shovel testing over a wider area.

In addition to the random quadrat survey considerable time was spent interviewing knowledgeable local people (Appendix B). As a result of such interviews some time was spent in locating heritage sites that were outside of the quadrats selected for the 50% random sample.

4.0 RESULTS

The methodologies employed in this study have led to the identification of thirty-nine heritage sites within the potential impact area of the proposed Murphy Creek Hydroelectric Project.

Site file research in Victoria indicated that twenty-four heritage sites within the study area had been recorded previous to 1980. The field work done in 1980 and 1981 under the terms of reference for the proposed Murphy Creek Project led to the identification of fifteen more heritage sites within the study area. Errors in plotting of some of the previously recorded sites were corrected and ambiguities in the site file were adjusted as a result of the Murphy Creek Project Heritage Resources study.

Fourteen of the fifteen new sites recorded within the study area were identified as a result of the random quadrat survey and are described below. The other new site was recorded as a result of information supplied by local knowledgeable people. Four other sites that had previously been recorded were pointed out by local knowledgeable people and were re-surveyed in 1980. All sites located by information received from local people are described in the text beginning on page 41.

4.1 SITES PREVIOUSLY RECORDED

The site file search at the Heritage Conservation Branch in Victoria indicated that a total of twenty-four heritage sites had been recorded for the specific study area.

Seventeen (70.8%) were recorded as general activity sites; three (12.5%) were recorded as circular cultural depressions; and three (12.5%) were recorded as burial sites. One (4.2%) recorded pictograph site makes up the total.

TABLE 1

SITES RECORDED BEFORE 1980, MURPHY CREEK PROJECT STUDY AREA

KEYED TO FIGURE 7

Site Number on Figure 7	Elevation*	Latitude N ° ' "	Longitude W ° ' "	Type**	Date Recorded and Condition
1. DiQk 1	427m E	49 20 40	117 46 45	CCD	1961 - Disturbed
2. DiQk 2	424m E	49 20 40	117 45 20	GA	1961 - Disturbed
3. DiQk 5	451m E	49 20 02	117 41 50	GA	1961 - Disturbed
4. DiQk 7	454m E	49 19 56	117 40 35	GA	1977 - Good
5. DiQk 8	515m E	49 20 02	117 40 42	P	1977 - Good
7. DiQj 17	433m E	49 20 06	117 39 28	GA	1977 - Disturbed
10. DhQj 1	420m E	49 19 00	117 38 25	B	1961 - Disturbed
11. DhQj 2	424m E	49 19 05	117 39 20	B	1961 - Disturbed
12. DhQj 5	424m E	49 19 30	117 38 45	GA	1977 - Disturbed
13. DhQj 6	515m E	49 19 06	117 37 48	GA	1977 - Disturbed
14. DhQj 7	420m W	49 19 15	117 30 07	GA	1977 - Disturbed
15. DhQj 8	454m E	49 18 14	117 38 09	GA	1977 - Disturbed
16. DhQj 9	420m W	49 18 55	117 39 23	GA	1977 - Good
17. DhQj 10	430m E	48 18 06	117 38 29	GA	1977 - Good
18. DhQj 11	430m E	49 17 57	117 38 30	GA	1977 - Good
19. DhQj 12	420m E	49 18 13	117 38 40	CCD	1977 - Disturbed
20. DhQj 13	424m E	49 18 40	117 39 12	B	1977 - Disturbed
21. DhQj 14	484m E	49 19 20	117 38 20	GA	1977 - Disturbed
22. DhQj 15	420m E	49 18 40	117 38 08	GA	1977 - Disturbed
23. DhQj 16	420m E	49 18 50	117 37 52	GA	1977 - Disturbed
24. DhQj 17	418m E	49 18 50	117 38 08	GA	1977 - Disturbed
25. DhQj 18	424m E	49 19 02	117 37 52	GA	1977 - Disturbed
30. DhQj 4	424m E	49 15 20	117 39 03	CCD	1973 - Excellent
39. DgQk 1	424m W	not given		GA	1973 - Disturbed

* Elevation in metres above sea level. E = eastbank; W = westbank.

** Type of site as best as can be determined.

CCD = Circular Cultural Depression(s); GA = General Activity; B = Burial; P = Pictograph

Table 1 on the previous page provides general data on all twenty-four previously recorded sites (see also Figures 6 and 7).

Complete site forms are on file at Okanagan College, Kelowna and at the Heritage Conservation Branch in Victoria.

4.2 SITES RECORDED FROM RANDOM SAMPLE SURVEY

Survey of the nine riverbank west quadrats led to the identification of two sites.

Survey of the five creekmouth west quadrats led to the identification of six sites.

Survey of the ten riverbank east quadrats led to the identification of three sites.

Survey of the five creekmouth east quadrats led to the identification of three sites.

Ten (71%) of the fourteen sites indentified during the random quadrat survey were of the Circular or Rectangular Cultural Depression Type. Four (28%) were of the General Activity Type. Brief descriptions of the sites recorded in 1980 are given below with their numbers keyed to locations on Figure 7.

Complete site reports are on file with the Heritage Conservation Branch in Victoria, at the Archaeology Laboratory of Okanagan College in Kelowna, and with the B.C. Hydro and Power Authority in Vancouver.

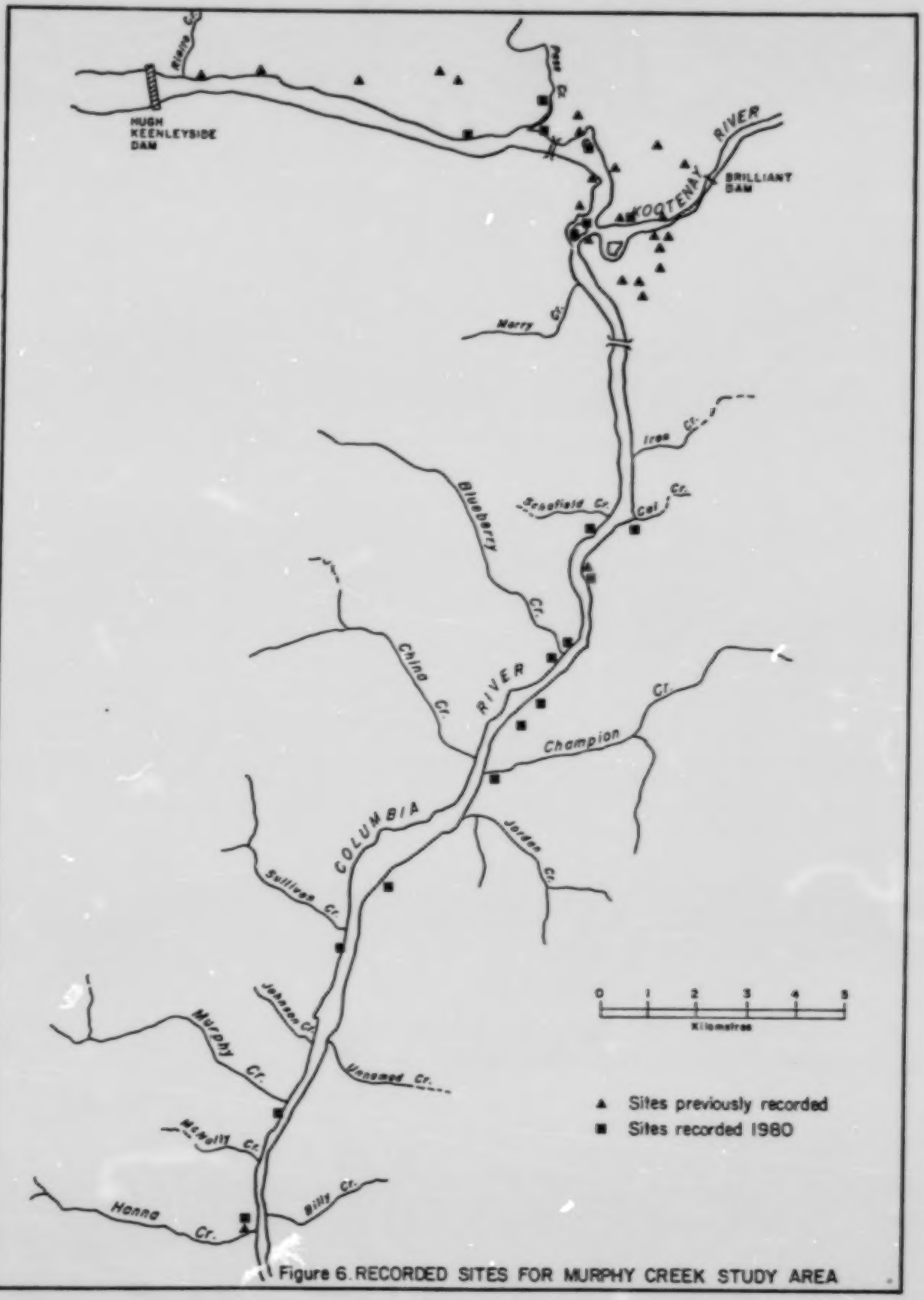

Figure 6. RECORDED SITES FOR MURPHY CREEK STUDY AREA

6. Site DhQk 5

Location : 49 19 58 n. 117 40 47 w.

Type : General Activity

Elevation : 400m

This site is on the Robson side of the Columbia River near and old ferry slip approximately 20m upstream from the slip now in use. The site could perhaps be called an isolated find as one basalt retouched flake constitutes the material observed. The possibility of subsurface material occurring at this site is quite high given the number of sites previously recorded in the nearby area.

8. Site DiQj 21

Location : 49 20 02 n. 117 39 50 w.

Type : General Activity

Elevation : 424m

This site is perhaps a small campsite or remnant of a larger activity area. The site is located 30m east of Pass Creek, downstream from the confluence with the Columbia River. The site is eroding from a cutbank where fire-cracked rock and chert flakes are found among the river cobbles. Nephrite found at this site is held at the Archaeology Lab of Okanagan College.

9. Site DiQj 22

Location : 49 20 30 n. 117 39 55w.

Type : General Activity

Elevation : 424m

This site may have been a large campsite at one time. The site is located on a small knoll on west side of Pass Creek approximately 400m north of the Columbia River. The knoll has been quarried for gravel but cultural material is found over the surface of what is left of the knoll. Depth of cultural deposit is 20 to 30cm and contains fire-cracked rock, calcined bone, petrified wood and chert flakes.

26. Site DhQj 22

Location : 49 18 52 n. 117 39 20 w.

Type : Circular and Rectangular Cultural Depressions

Elevation : 411m

This site is located on the southwest side of an island opposite the mouth of the Kootenay River. The island is known locally as Zuckerberg Island. The site consists of a total of thirteen cultural depressions of varying size and depth. This site could represent the remains of a large pit house village.

27. Site DhQj 23

Location : 49 18 56 n. 117 39 15 w.

Type : Circular and Rectangular Cultural Depressions

Elevation : 414m

This site is on the northeast side of Zuckerberg Island and overlooks the confluence of the Columbia and Kootenay

Rivers from directly west of the mouth of the Kootenay River. The site consists of five circular depressions and one rectangular rock-lined depression. Site could represent the remains of a winter village.

28. Site DhQj 21

Location : 49 15 37 n. 117 38 47 w.

Type : Circular and Rectangular Cultural Depressions

Elevation : 424m

This site is on a large, low terrace 300m south of the mouth of Schofield Creek approximately 30m west of the Columbia River. One large, circular depression 8m in diameter by 1.5m deep may represent the remains of a winter pit house. Two smaller circular depressions may represent cache pits or sweat lodges. Three rectangular depressions may be the remains of summer mat lodge structures or of more modern cabin type dwellings. The site is well defined and is in a good state of preservation.

29. Site DhQj 25

Location : 49 15 38 n. 117 38 27 w.

Type : Rectangular Cultural Depression

Elevation : 419m

This site consists of one rectangular depression 2m by 3m by .75m deep with river cobbles lining the bottom of the depression. No other cultural material was observed in this

area known locally as Waterloo Eddy. The site may represent the remains of a cache pit or a sweat lodge.

31. Site DhQj 19

Location : 49 14 16 n. 117 39 28 w.

Type : Circular and Rectangular Cultural Depressions

Elevation : 427m

This site is on a small terrace 30m south of the mouth of Blueberry Creek approximately 250m west of the Columbia River. The circular depression is 4m in diameter and 1m deep, it may represent the remains of an isolated winter pit house. The rectangular depression is ill-defined but could represent the remains of a summer mat lodge dwelling.

32. Site DhQj 20

Location : 49 14 26 n. 117 39 16 w.

Type : Retangular Cultural Depression

Elevation : 430m

This site is on a small terrace 50m north of the mouth of Blueberry Creek approximately 30m west of the Columbia River. One rectangular rock-lined depression 4m by 3m 1m deep constitutes the site. No cultural material was observed near the depression. The site may represent the remains of an historic cabin, or an unique type of dwelling of the early inhabitants.

35. Site DhQj 28

Location : 49 13 00 n. 117 39 12 w.

Type : Circular and Rectangular Cultural Depressions

Elevation : 417m

This site is located on a low terrace on the south side of Champion Creek 50m upstream from its confluence with the Columbia River. Two small rectangular depressions and one small circular depression constitute the site. No other cultural material was observed in the area. This site may be the remains of what was once a larger camp area now removed by flooding from Champion Creek.

36. Site DhQk 2

Location : 49 10 58 n. 117 42 50 w.

Type : Circular and Rectangular Cultural Depressions

Elevation : 411m

This site consists of one circular depression of 3m diameter by 1m deep and a rectangular depression 3m by 4m by 1m deep. The site is on a small terrace 400m south of the mouth of Sullivan Creek and approximately 10m above the west bank of the Columbia River. No other cultural material was observed in the area. This site may represent the remains of a winter pit house and a summer mat lodge.

37. Site DhQk 4

Location : 49 11 50 n. 117 42 08 w.

Type : Circular Cultural Depressions

Elevation : 417m

This site is located on a low ridge on the east side of the Columbia River approximately 3km south of the mouth of Jordan Creek. The site configuration is unique. Four depressions of roughly 3m diameter are strung in a line with a north-south axis for approximately 120m along what appears to be an old beach line of the Columbia River. The site may represent an example of a single dwelling being rebuilt in a slightly different part of a favourite winter location.

38. Site DgQk 4

Location : 49 09 25 n. 117 42 40 w.

Type : Circular Cultural Depressions

Elevation : 410m

This site consists of two shallow depressions on a small terrace east of the railway tracks, 50m south of the mouth of Murphy Creek and 50m west of the Columbia River. No other cultural material was observed at the site. This site could represent the remains of a single house and cache pit.

39. Site DgQk 1

Location : 49 08 00 n. 117 44 40 w.

Type : General Activity

Elevation : 410m

This site is part of a large disturbed sandy terrace of approximately 30m by 70m. The site is 200m north of the mouth of Hanna Creek and 10m west of the Columbia River. Cultural material observed consists of numerous small, chert flakes, fire-cracked rock and calcined bone.

4.3 SITES RECORDED FROM LOCAL INFORMATION

Discussions with local knowledgeable people led to the identification of five heritage sites in the study area. Two prehistoric burial sites were reported on the east bank of the Columbia River opposite Caslegar (Groutage and Webber, pers. comm.). Two cultural depression sites were reported on the east bank of the Columbia River (Rohn, pers. comm.). One historic burial site was reported on the east bank of the Columbia River (Groutage, Rohn, Webber, pers. comm.). Brief descriptions of these sites are given below with numbers keyed to their location on Figure 7.

10. Site DhQj 1

Location : 49 19 06 n. 117 38 30 w.

Type : Burial

Elevation : 417m

This site lies along the north bank of the Kootenay River approximately 100m east of the confluence with the Columbia River. Human bone was observed eroding out of the bank 1m

below the present surface. This site has been subjected to erosion by periodic flooding of the Kootenay River. Local residents have collected artifacts and have observed human skeletal material being washed into the river.

11. Site DhQj 2

Location : 49 19 52 n. 117 39 07 w.

Type : Circular Cultural Depressions - Possible Burial

Elevation : 417m

This site is located about 1000m west of DhQj 1. It is on a small island in the Columbia River known locally as Waldie's Island. The site was reported as a burial site (Groutage, pers. comm.), but no burial evidence was observed during survey of the site. The site consists of seven large depressions and four smaller ones, all of varying depths and dimensions. This site may represent the remains of a winter village with an associated burial area now too overgrown to be discovered by surface examination.

30. Site DhQj 4

Location : 49 15 05 n. 117 39 02 w.

Type : Circular and Retangular Cultural Depressions

Elevation : 424m

This site is located on the east bank of the Columbia River approximately 1.5km downstream from Waterloo Eddy. The site contains 9 cultural depressions, 2 of which are 10m in diameter.

If this site represents the remains of a winter village, it would have contained the largest structures so far identified in the study area.

33. Site DhQj 27

Location : 49 13 43 n. 117 39 59 w.

Type : General Activity

Elevation : 424m

This site is located at the former Doukhobor settlement of Blagodatnie and farming activities have obliterated the reported cultural depressions. Fire-cracked rock and ribbon quartzite scrapers were observed scattered over an area of approximately 100m by 200m.

34. Site DhQk 3

Location : 49 13 21 n. 117 40 15 w.

Type : Burial

Elevation : 430m

This site is the Doukhobor Cemetery at Blagodatnie. A large fenced graveyard 40m by 80m contains approximately one hundred graves. Sixteen graves are marked by headstones or small fenced enclosures. The majority of the graves are marked by piles of river cobbles or are outlined by river cobbles. It is difficult to obtain an accurate count of actual interments as some grave outlines would appear to enclose family units rather than an individual.

A letter from the Union of Spiritual Communities of Christ regarding this cemetery at Blagodatnie is appended (Appendix C).

4.4 PRELIMINARY FIELD RECONNAISSANCE

Subsequent to the nine weeks spent in the study area in 1980, a one-week preliminary field reconnaissance of the proposed borrow areas (Figure 7) was undertaken in 1981. A four seated light aircraft was rented at the Castlegar Airport to overfly Murphy and Hanna Creek proposed borrow areas. Areas of heritage resource potential were noted from the air, and subsequently checked by ground survey. No heritage sites were recorded in the proposed borrow areas.

No previous surveys identify sites in the proposed borrow areas. Local knowledgeable people interviewed knew of no heritage sites in the proposed borrow areas. One local historian (Jack Johnston pers. comm.) mentioned that Murphy Creek used to be a pack trail route for prospectors of the area. No evidence of the pack trail was encountered in ground survey along Murphy Creek.

Field reconnaissance above the Keenleyside Dam was done in an attempt to re-locate some of the sites previously recorded by Harrison (1961). No systematic survey was done but sites DiQk 3, 4 and 6 previously recorded as being near the Keenleyside Dam site could not be located. Considerable time was spent within the study area in an attempt to re-locate previously recorded sites, usually without success due to recording errors. More time was spent on the random quadrat sample survey as outlined in the methodology.

5.0 EVALUATION AND DISCUSSION

Before assessing or evaluating the significance of specific heritage resources within the study area a discussion of significance in general is required.

Significance is relative. Something is more or less significant than something else because of particular criteria. Heritage resources may come under any or all of five types of significance, each of which has its particular criteria.

5.1 TYPES OF SIGNIFICANCE

Five types of significance that heritage resources might be assessed under (after Schiffer and Gumerman, 1977) are:

1. Scientific Significance

   A site or resource is said to be scientifically significant when its further study may be expected to help answer current research questions. Criteria for scientific significance might be: size of site; depth of cultural deposit; time of occupation; condition of site; uniqueness of site; or any other criteria that may further scientific knowledge.

2. Historical Significance

   Archaeological resources are said to be historically significant if they provide a typical or well preserved example of a prehistoric culture; historic tribe; period

of time; or category of human activity; or if they can be associated with a specific event or aspect of history or prehistory.

3. Ethnic Significance

An archaeological entity which has religious; social; mythological; or other special importance for a discrete population, is said to be ethnically significant.

4. Public Significance

The area of public significance includes: the use of archaeological sites to educate the public about the past and the way it is studied; the use of research findings to enrich our present existence; the use of archaeological information by industry for practical applications; the use of objects, ruins, and restored or stabilized structures for public exhibit and enjoyment; and benefits to the local economy that result from tourism attracted by archaeological exhibits.

5. Legal Significance

The Heritage Conservation Act of British Columbia determines the legal criteria for dealing with heritage resources in British Columbia.

Most of the heritage sites recorded in the Murphy Creek Project study area could be significant to some extent based on the types of criteria outlined above. Some sites are more significant than others

as more criteria for significance apply to them.

The Resource Management Division of the Heritage Conservation Branch has recently issued a Guidelines for Heritage Resources Impact Assessment in British Columbia (1981). Their discussion of significance is similar to the above and their checklist of criteria for archaeological site evaluation is appended (Appendix E).

5.2 DISCUSSION OF RANDON SAMPLE

Fourteen archaeological sites were recorded in the study area as a result of a stratified random quadrat survey of a 50% sample of the Murphy Creek Project study area. Eight of these sites are located on the west bank of the Columbia River. Six of the eight are from creekmouth quadrats and two are from riverbank quadrats. The random quadrat survey on the east bank of the Columbia River led to the identification of six sites. Three are in creekmouth quadrats and three are in riverbank quadrats.

The west bank of the Columbia River on the basis of these data appears to have a slight advantage for prehistoric settlement preference. Fourteen quadrats on the west bank led to the identification of eight sites, while fifteen quadrats on the east bank led to only six sites.

The second strata of the random sample reveals an even greater settlement preference. Survey of five creekmouth quadrats on the west

bank located six sites. Survey of nine riverbank quadrats on the west bank led to only two sites.

The east bank survey of five creekmouth quadrats located three sites. Survey of ten riverbank quadrats on the east bank led to only three sites.

It would seem that in the past there was a definite preference for settling near tributary creeks of the Columbia River. The creeks on the west side of the river would appear to have been of slightly greater importance.

Over the entire sample, the creekmouth quadrats produced .9 sites per quadrat. The riverbank quadrats produced .26 sites per quadrat. Given these data, twelve more sites are predicted for the study area.

5.3 SIGNIFICANT SITES FROM RANDOM SAMPLE

Out of the fourteen heritage sites recorded during the random sample survey of the Murphy Creek Project study area, at least three are considered to have greater significance than the others. The three are all cultural depression sites but have varying features. The sites deemed to have greater significance are DhQj 21, DhQj 22, and DhQk 4.

1. Site DhQj 21 - Number 28 in Figure 7

   This site is located just south of Schofield Creek and has one large circular depression with associated

rectangular depressions. The site may be a combination winter village - summer camp, or it may represent a transitional stage in the area chronology when traditional winter pit house dwellings were being abandoned for the square log cabin. The site meets the criteria of reasonable expectation of contributing to scientific knowledge. The site is significant also as it is in excellent condition.

2. Site DhQj 22 - Number 26 in Figure 7
This site is located on Zuckerberg Island near the centre of Castlegar. The site is unique in that the circular cultural depressions are of the greatest depth encountered in the study area. Because of the location the site might also be considered for public significance.

3. Site DhQk 4 - Number 37 in Figure 7
This site is located south of Jordan Creek on the east bank of the Columbia River. It is unique in that the configuration of circular cultural depressions strung in a line extending for 120m has not been previously encountered in the study area. This site should contribute to scientific knowledge of winter settlement patterns. The site is in an excellent state of preservation perhaps because it is somewhat difficult to get to.

5.4 DISCUSSION OF SITES PREVIOUSLY RECORDED AND REPORTED

Twenty-one of the twenty-four heritage sites previously recorded for the study area are on the east side of the Columbia River. The random quadrat survey of 1980 identified more sites on the west bank of the river than on the east. The reasons for the difference cannot be properly explained without knowing what sort of time was allocated to each side of the Columbia River in the previous surveys. The sites previously recorded do cluster at the mouth of the Kootenay River but that may reflect survey bias as much as prehistoric settlement preference.

There was some ambiguity between the site reports on file at the Heritage Conservation Branch and the published references to the previously recorded sites in the study area. The greatest disparity was with the reported sites DhQj 1, DhQj 2, and DhQj 24. The site report for DhQj 1 filed in 1961 by Harrison locates the site on the north bank of the Columbia River east of Waldie's Mill, east of Pass Island. The description of site DhQj 1 in Harrison (1961:30) locates the site on the Kootenay River, and it is in all respects the site given the designation DhQj 2 in the site file.

Turnbull (1977) in his Figure 1 shows DhQj 1 on the Kootenay River and identified as a burial and camp type site. He also shows DhQj 2 on a small island in the Columbia River upstream from the confluence with the Kootenay. Harrison (1961:30) locates DhQj 2 on the same island. The site DhQj 24 as reported and recorded during the 1980 field work has been determined to be the same as the DhQj 2 as reported by Harrison (1961) and Turnbull (1977). The site number DhQj 24

has been dropped and the site reports on file have been adjusted so that DhQj 1 and DhQj 2 now conform with published reports. The other problems with previously recorded sites have been resolved so that all sites listed in this report conform to the designations on the site reports on file at the Heritage Conservation Branch in Victoria.

The twenty-four previously recorded sites and the fifteen new heritage sites recorded in 1980 brings the total of heritage sites in the Murphy Creek Project study area to thirty-nine sites.

5.5 SIGNIFICANT SITES PREVIOUSLY RECORDED AND REPORTED

Of the twenty-four heritage sites previously recorded for the study area, at least three might be of some significance. The three sites of some possible significance are, DhQj 1, DhQj 2 and DhQj 4.

1. Site DhQj 1 - Number 10 in Figure 7
   This site is located on the north bank of the Kootenay River just east of the confluence with with the Columbia River. The site is well known locally as a burial area and important morphological data might be obtained from this site. The site is in all probability the village "Qepi'tles" as described in Teit (1930:209) and on page 9 of this report. Historical and public significance criteria should apply to this site.

2. Site DhQj 2 - Number 11 in Figure 7

   This site is recorded as a circular cultural depression site but was reported as a burial site (Groutage, pers. comm.). The site does contain well defined cultural depressions that may represent the remains of a pit house village. The greatest significance might be the possible burial data obtained from close association with a winter village area. The site would appear to meet criteria for scientific significance.

3. Site DhQj 4 - Number 30 in Figure 7

   This is a circular cultural depression site on the east bank of the Columbia River approximately 1.5km downstream from Waterloo Eddy. The site contains some of the largest depressions encountered in the study area. The site also covers the largest area of any encountered in the study area. This site could represent the remains of a very large winter village and could provide important data regarding inter-village associations.

This Stage 1 study has met the objectives of identifying and assessing heritage resource potential in the study area. Thirty-nine sites have been identified for the study area through document research and ground survey. Nineteen of the thirty-nine sites have been recently located and six of those have been assessed as significant for further

evaluative testing at the Stage 2 level of development. The six sites listed above meet all of the criteria for significance, while others meet only some. A total evaluation of the entire heritage resource population within the study area was not undertaken at this Stage 1 level. The sites chosen demonsrate the need for further work in the study area.

5.6 POTENTIAL IMPACT ON HERITAGE RESOURCES

If the Murphy Creek Hydroelectric Project is completed as proposed the heritage resources in the reservoir will be adversely affected if mitigation efforts are not attempted. Mohs (1977) indicates the main forces of destruction of archaeological sites in a reservoir are:

a. water erosion
b. wind erosion
c. pre-reservoir clearing activities
d. post-reservoir development projects
e. activities of local collectors

All of the above might be expected to occur in the Murphy Creek Project area.

The reservoir level for the Murphy Creek Project has been established at 424m. Thurber Consultants Ltd. of Victoria are undertaking the bank stability investigation for the project and they have assessed the locations of the thirty-nine heritage sites in relation to the full supply level (F.S.L.) and safeline. Assessments and comments of Thurber are shown for the sites - keyed to Figure 7.

1. DiQk 1 - site is above F.S.L. - below safeline
2. DiQk 2 - site is just above safeline
3. DiQk 5 - site is above F.S.L. - below safeline
   - protection is planned for the highway, but upslope of the site
4. DiQk 7 - well upslope of safeline
5. DiQk 8 - well upslope at safeline
6. DhQk 5 - below F.S.L., will be inundated
7. DiQj 17 - well above F.S.L.
8. DiQj 21 - below F.S.L., will be inundated
9. DiQj 22 - just above F.S.L., below safeline
10. DhQj 1 - below F.S.L.
11. DhQj 2 - below F.S.L., will be inundated
12. DhQj 5 - above F.S.L., just on the safeline
13. DhQj 6 - well above F.S.L.
14. DhQj 7 - below F.S.L., will be inundated
15. DhQj 8 - well above F.S.L.
16. DhQj 9 - below F.S.L. will be inundated
17. DhQj 10 - well above F.S.L.
18. DhQj 11 - above F.S.L., just on the safeline
19. DhQj 12 - below F.S.L., will be inundated
20. DhQj 13 - above F.S.L., but below safeline
21. DhQj 14 - well above safeline
22. DhQj 15 - above F.S.L., but below safeline
23. DhQj 16 - above F.S.L., but below safeline
24. DhQj 17 - below the F.S.L., will be inundated

25. DhQj 18 - above the F.S.L., just on the safeline
26. DhQj 22 - above F.S.L., just on the safeline
27. DhQj 23 - above F.S.L., on the safeline
    - possible protection for the island is planned and would protect the site.
28. DhQj 21 - above the F.S.L., below the safeline
29. DhQj 25 - above the F.S.L., and on the safeline
30. DhQj 4 - on the F.S.L. will be partially inundated.
    - possible protection is planned for the utility crossing, but will likely cover the site.
31. DhQj 19 - below F.S.L., will be inundated
32. DhQj 20 - below F.S.L., will be inundated
33. DhQj 27 - above F.S.L., below safeline
34. DhQk 3 - above safeline, protection is planned
35. DhQj 29 - above F.S.L., below safeline
36. DhQk 2 - below F.S.L., will be inundated
37. DhQk 4 - below F.S.L., will be inundated
38. DgQk 4 - below F.S.L., will be inundated
39. DgQk 1 - site is downstream of proposed dam site.

Twenty-eight of the thirty-nine identified heritage sites are endangered by flooding or bank slumping that might occur with the completion of the Murphy Creek Project (Figure 7).

The ancillary development of construction site, access roads, borrow areas would appear to have very limited adverse effect to the heritage resource base within the study area. One site DgQk 4 at the

mouth of Murphy Creek could possibly be affected by construction activities. No higher elevation sites were identified for the borrow areas or access routes.

6.0 RECOMMENDATIONS

From a heritage resource perspective it is not appropriate at this time to recommend a preferred project alternative.

The Stage 2 - Detailed Impact Assessment might complete the intensive inventory, site evaluation and impact identification begun in this Stage 1 study of 1980-81.

Evaluative test excavation might be implemented at some or all of the sites deemed to meet greater criteria for significance as outlined in this report. Particular attention might be given to DhQj 1, DhQj 2, DhQj 4, DhQj 21 and DhQk 4 as they appear to have considerable significance and are all below the safeline with a reservoir level of 424m.

Further ground survey might be conducted in the proposed borrow areas as more exact delineation of the areas is developed. A systematic survey employing shovel testing might be undertaken at the quarry sites before quarrying activities begin.

Mitigation procedures for the considerable heritage resource base within the reservoir area can be implemented when a more thorough evaluation of all of the heritage resources has been undertaken during the Stage 2 level of development. Priorities for mitigation might change as more evaluative work is done in the proposed Murphy Creek Project area.

7.0 REFERENCES CITED

Bouchard, Randy and Dorothy Kennedy

1979 Ethnogeography of the Franklin D. Roosevelt Lake Area. B.C. Indian Language Project. Victoria.

B.C. Hydro

1980 Proposed Murphy Creek Hyroelectric Project Terms of Reference. B.C. Hydro and Power Authority, Vancouver.

Butler, B. Robert

1961 The Old Cordilleran Culture in the Pacific Northwest. Occassional Papers of the Idaho State College Museum, No.5. Pocatello, Idaho.

1962 Contributions to the Prehistory of the Columbia Plateau. Occasional Papers of the Idaho State College Museum, No.9. Pocatello, Idaho.

Cressman, Luther S.

1977 Prehistory of the Far West, Homes of Vanished Peoples. University of Utah Press. Salt Lake City, Utah.

Cressman, Luther S., et al

1960 Cultural Sequence at The Dalles, Oregon; A Contribution to Pacific Northwest Prehistory. American Philosphical Society Transactions. n.s. vol.50,pt.10. Philadelphia.

Choquette, Wayne

1977 Summary Report 1977 Kootenay Regional Survey. Heritage Conservation Branch. Ms. 1977/18. Victoria.

Collier,D., A.E. Hudson, and A.Ford

1942 Archaeology of the Upper Columbia Region. University of Washington Publications in Anthropology. v.9, no.1. Seattle.

Harrison, Peter D.

1961 Report of the Archaeological Survey of the High Arrow Reservoir. Heritage Conservation Branch. Ms. 1961/5. Victoria, B.C.

Heritage Conservation Branch

1981 Guidelines for Heritage Resources Impact Assessment in British Columbia. Resource Management Division. Victoria.

n.d. Guide to the British Columbia Archaeological Site Inventory Form. Archaeological Sites Division. Victoria.

Krajina, V.J.

1969 Ecology of Western North America. Vol. 2, University of British Columbia, Vancouver.

Mitchell, Donald H.

1965 Archaeological Investigations, Summer 1965. Heritage Conservation Branch. Ms. Victoria.

1967 Archaeological Investigations, Summer 1966. Heritage Conservation Branch. Ms. Victoria.

Mohs, Gordon

1977 Post Inundation: Archaeological Survey Studies of the Arrow Lakes, Heritage Conservation Branch. Ms. Victoria.

Osborne, D.A.L. Bryan, and R.H. Crabtree

1961 The Sheep Island Site and the Mid-Columbia Valley. River Basin Survey Papers, No. 24, Smithsonian Institution. Bureau of American Ethnology, Bulletin 179. Washington, D.C.

Ray, Verne F.

1932 The Sanpoil and Nespelem: Salishan Peoples of Northeastern Washington. University of Washington Publications in Anthropology, vol. 5. Seattle.

1936 Native Villages and Groupings of the Columbia Basin. Pacific Northwest Quarterly. vol. 27, pt. 2, pp. 99-152.

1939 Cultural Relations in the Plateau of Northwestern North America. F.W. Hodge Anniversary Publication Fund, vol. 3 Los Angeles, California.

Robinson, Michael and Paul St. Pierre

1973 Department of Highways Archaeological Survey Final Report. Heritage Conservation Branch. Ms. 1973/28. Victoria.

Schiffer, M. and G. Gumerman (eds.)

1977 Conservation Archaeology, A Guide for Cultural Resource Management Studies. Academic Press. New York, N.Y.

Stryd, Arnoud and Stephen Lawhead (eds.)

1978 Reports of the Lillooet Archaeological Project, Number 1. Introduction and Setting. National Museum of Man Mercury Series. Archaeological Survey of Canada No. 73. Ottawa.

Swanson, Earl H. Jr.

1962 The Emergence of Plateau Culture. Occasional Papers of the Idaho State College Museum, No. 8. Pocatello, Idaho.

Teit, James

1928 The Middle Columbia Salish. University of Washington Publications in Anthropology, v.2,no.4,pp.83-128. Seattle.

1930 The Salishan Tribes of the Western Plateaus. Bureau of American Ethnology, Annual Report. v.45. Washington,D.C.

Turnbull, Christopher J.

1968 Interior Projects. In, Archaeological Investigations, Summer 1967, compiled by D.H. Mitchell, pp. 6-25. Heritage Conservation Branch. Ms. Victoria.

1969 Southeastern Interior Projects. In Archaeological Investigations, Summer 1968, compiled by D.H. Mitchell, pp. 20-27. Heritage Conservation Branch. Ms. Victoria.

1977 Archaeology and Ethnohistory in the Arrow Lakes, Southeastern British Columbia. National Museum of Man Mercury Series, Archaeological Survey of Canada No. 65. Ottawa.

Turner, N.J. R. Bouchard, and D. Kennedy

1980 Ethnobotany of the Okanagan-Colville Indians of British Columbia and Washington. B.C. Provincial Museum Occasional Papers Series, No. 21. Victoria.

APPENDIX A

Terms of Reference issued by B.C. Hydro, 1980

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

TERMS OF REFERENCE
FOR
ENVIRONMENTAL STUDIES
FOR THE
PROPOSED MURPHY CREEK
HYDROELECTRIC PROJECT

Draft No. 4

May 1980

SYSTEM ENGINEERING DIVISION

TERMS OF REFERENCE

FOR ENVIRONMENTAL STUDIES FOR THE PROPOSED

MURPHY CREEK HYDROELECTRIC PROJECT

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A. Geology and Landforms
B. Hydrology and River Morphology
C. Water Quality
D. Climate
E. Agriculture
F. Vegetation
G. Forestry
H. Wildlife
I. Fish and Aquatic Habitats
J. Regional Economy and Human Communities
K. Recreation and Tourism
L. Heritage Resources
M. Resource Analysis

1.0 INTRODUCTION

These Terms of Reference are for detailed ecological and socio-economic studies, called the "Studies", which are required for environmental impact evaluation of a potential hydroelectric development by the British Columbia Hydro Electric and Power Authority (B.C. Hydro) on the Columbia River in the vicinity of Murphy Creek.

Prior to signing the Columbia River Treaty in 1961 and its ratification in 1964, numerous studies were made of the hydroelectric development of the Columbia River in Canada. The Treaty between the United States and Canada led to the construction of Mica, Hugh Keenleyside and Duncan projects in Canada. Other major hydroelectric projects in the Columbia River basin in Canada include the Kootenay Canal project completed in 1975, and the Seven Mile and Revelstoke projects which are under construction.

The potential of the Murphy Creek site was first identified in 1956. Consideration of the development of the project was more recently given during the 1972 B.C. Energy Board studies. Subsequently, preliminary engineering and environmental studies were carried out in 1977 and 1978, to examine the project potential at a prefeasibility level and to identify probable environmental impacts.

The Murphy Creek site is located on the Columbia River approximately 3 km upstream of the city of Trail and 25 km downstream of the confluence of the Columbia and Kootenay rivers. The tentative layout for the project consists of an earthfill dam, approximately 33 m high, extending across the river from the left bank to a concrete spillway and 10-unit powerhouse located on the right bank. A total installed capacity of 400 MW would be provided by ten 40 MW turbine generators.

In early 1979 a preliminary study of the residential, commercial and industrial properties that may be affected by the

1.0 INTRODUCTION - (Cont'd)

project was undertaken by the Properties Division. An engineering feasibility study scheduled for completion by the end of 1980 is in progress.

All field work associated with the Studies outlined in these Terms of Reference is scheduled for completion in 1980 where possible, in order that environmental impacts may be properly assessed by mid-1981. The engineering feasibility study associated with the project is being carried out by the Hydroelectric Generation Projects Division of B.C. Hydro, who will also be responsible for several aspects of the Studies such as geology, hydrology and river morphology.

2.0 STUDIES AREA

The Studies area consists of all lands on either side of the Columbia River from the axis of the proposed dam in the vicinity of Oasis, upstream to the Hugh Keenlyside dam on the Columbia River, and to the Brilliant dam on the Kootenay River, up to an elevation of 500 m. Studies may extend beyond this area in specific cases where considered necessary.

Some areas outside these limits will be studied for socio-economic impacts from both the construction work force and the operating staff.

3.0 STUDIES OBJECTIVES

1. To provide an inventory of environmental resources that could be impacted by the potential project within the Studies area. This will be compiled from on-site investigations and other available sources.

2. To provide a qualitative and quantitative evaluation of impacts, both adverse and beneficial, which would result from the potential project.

3.0 STUDIES OBJECTIVES - (Cont'd)

3. To provide an evaluation of resource losses and gains in monetary terms for inclusion in a benefit-cost analysis.

4. To provide data which could be needed for preparation of an Environmental Impact Statement for the potential project.

4.0 STUDIES ORGANIZATION

(a) Co-ordination

The entire program will be directed and co-ordinated either by B.C. Hydro, or by B.C. Hydro assisted by a prime consultant. Under this direction, certain disciplines of the Studies will be carried out by B.C. Hydro staff or by consultants. Technical responsibility within individual disciplines will rest with the B.C. Hydro staff or with respective consultants. B.C. Hydro or its prime consultant will assume the role of co-ordinating the individual disciplines during the Studies period and during the preparation of the final report.

Consultants should liaise with the appropriate government agencies both before and during their studies to ensure that full use is made of existing available information and knowledge.

Consultants, subconsultants and their staff shall co-operate with all other consultants hired by B.C. Hydro for the same or similar projects, and on request by B.C. Hydro shall make available to such consultants all material gathered or produced for this project.

B.C. Hydro has an ongoing Community Relations program associated with this project. All contact with outside agencies and the public shall be co-ordinated with the Community Relations

4.0 STUDIES ORGANIZATION - (Cont'd)

program through B.C. Hydro. B.C. Hydro should be advised in advance of the need for any formal contact with local or regional governments and the public.

(b) Studies Sections

The Studies shall be organized into four groups: Physical Resources, Terrestrial Resources, Aquatic Resources and Socio-economic. Each group is composed of closely related subjects called "Sections" A to M, as follows:

Physical Resources

A Geology and Landforms
B Hydrology and River Morphology
C Water Quality
D Climate

Terrestrial Resources

E Agriculture
F Vegetation
G Forestry
H Wildlife

Aquatic Resources

I Fish and Aquatic Habitats

Socio-economic

J Regional Economy and Human Communities
K Recreation and Tourism
L Heritage Resources
M Resource Analysis

5.0 STUDIES METHODOLOGY

Evaluation of the environmental impact of the project shall take into consideration all project actions associated with the development. These shall include pre-project activities such as field investigation or land acquisition; construction activities such as site and reservoir clearing, dam, powerhouse and road construction, construction camp activities; and operation and maintenance of the powerplant. Project descriptions will be provided by B.C. Hydro.

Definition and development of all methodologies for the Studies should be made early in the program and provided to B.C. Hydro for their approval. This may include the use of various impact matrices, mapping techniques, economic analyses, etc. The methodology for evaluation in each of the Sections shall be consistent with criteria selected for the evaluation of the environmental impact. Special attention shall be directed to providing information suitable for inclusion in a benefit-cost analysis of mitigation and compensation alternatives.

The following is provided by B.C. Hydro to give direction on the scope of the Studies:

1. All resources and their significance, with and without the project, on a local, regional and provincial scale based upon present value and potential value.

2. Environmental impacts including:

   a. Primary, secondary and induced impacts.

   b. Beneficial and adverse effects.

5.0 STUDIES METHODOLOGY - (Cont'd)

3. Distributional aspects of impacts including:

   a. Geographical - local, regional, provincial and international.

   b. Social - impacts on various segments of the population, ethnic or special interest groups.

   c. Transfer of resource demands to other locations.

4. Probability of occurrence of an impact and reasons for uncertainty of the impact's occurrence.

5. Expected time and duration of an impact occurrence. A distinction shall be made between short-term impacts (those which last for the construction period only) and long-term impacts (those which persist after construction).

6. Possible benefits, both short and long-term, of all compensation and mitigation measures.

7. The costs associated with all compensation and mitigation measures.

8. Relationship between project impacts and long-term regional development prospects shall be evaluated.

All sources of data, information and references shall be thoroughly documented.

6.0 REPORTING PROCEDURES

Written reports will be required for all Sections of the Studies. The number of copies of such reports will be established at

6.0 REPORTING PROCEDURES - (Cont'd)

the time study proposals are called for. Prior to the preparation of these reports, consultants will be required to submit a report outline to B.C. Hydro for review and approval. Subsequently, draft reports will be prepared and submitted for review and approval by B.C. Hydro and, where necessary, by outside experts before they are accepted. All final reports shall be in a form suitable for release to government agencies and the public.

Following completion of all the reports for the Sections, B.C. Hydro or its prime consultant will prepare an integrated summary report in consultation with the authors of the Sections and outside experts, where necessary. This report will be the final report of the Studies.

7.0 STUDIES SCHEDULE

The Studies will be undertaken in 1980 and possibly beyond. A target schedule showing specific deadlines will be issued for each Section.

8.0 STUDIES SECTIONS

The following are guidelines for each of the Sections. These guidelines distinguish between inventory and assessment work and, where feasible, this distinction should be made in report preparation.

SECTION L

HERITAGE RESOURCES

Overall Objectives. To describe and quantify the heritage resource within the Study Area in accordance with the Heritage Conservation Act.

Note: The consultant is expected to conduct an initial inventory study as detailed under Inventory - Stage 1. Subsequently, more detailed terms of reference, and a separate budget will be prepared for further work. Dependent on the project schedule this second stage may follow immediately on receipt of the first report.

The sampling methodology (e.g. selective or representative) and the sampling rate are to be determined by the consultant, the Heritage Sites Branch and B.C. Hydro.

(a) Inventory - Stage 1

1. Summarize relevant information from archaeological, ethnological, ethnohistorical and historical literature.

2. Survey a sample of the areas to be flooded or otherwise affected by construction activities. From the sample estimate the total number of sites within the affected area.

3. Record and map all archaeological and historical sites discovered. Report on the condition, significance and type of each site.

4. Interpret the patterns found. Include judgements on the richness and uniqueness of the local resource.

5. Report on results of Items 1 to 4. Suggest additional work that may be needed to provide a more detailed inventory of heritage resources contemplated in Inventory - Stage 2.

(b) Inventory - Stage 2

Conduct detailed inventory study, as defined in consultation with B.C. Hydro and the Heritage Sites Branch. This might include systematic surface collection, excavation or other appropriate techniques.

(c) Effect of Development

1. Identify the impact of the project on individual sites and on the heritage resource in general.

2. Identify mitigation measures. Consider relocation of construction facilities and activities, protective works, operation of the reservoir and other measures.

3. Identify a program of essential salvage excavation.

APPENDIX B

NAMES AND ADDRESSES OF LOCAL KNOWLEDGEABLE PEOPLE

BERNIE BLOOM
Curator, National Exhibition Centre, Castlegar, B.C.

JIM CROMWELL
Dept. of Geography, Selkirk College, Castlegar, B.C.

LLOYD GROUTAGE
Naturalist, 410 N 2nd Ave., Castlegar, B.C.

JACK JOHNSTON
Naturalist, Fairview Subdiv. Castlegar, B.C.

JOE KILLOUGH
Ex Forest Ranger, 305 Elm St. Castlegar, B.C.

NICK KOOCHIN
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TERRY MANDERS
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MATT ROHN
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BOB WALTON
Naturalist, Castlegar, B.C.

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Historian, 288 Greenwood Ave. Castlegar B.C.

RON WELWOOD
Librarian, David Thompson University Centre, Nelson, B.C.

STEPHEN WHITEHEAD
Student, 3847 Dogwood St. Trail, B.C.

APPENDIX C

Letter from the Union of Spiritual Communities of Christ.

C-1

THE UNION OF SPIRITUAL COMMUNITIES OF CHRIST CANADA

Telephone: 442-8252
Box 760,
Grand Forks, B.C.
V0H 1H0

August 5th, 1980.

Okanagan College
1000 KLO Road
Kelowna, B.C.
V1Y 4X8

Attention: Mr. James Baker.

Gentlemen;

Our executive member, Mr. Mike Semenoff has passed on to me your letter of July 14th, 1980 regarding your archaeological survey for the Murphy Creek Dam.

Please be advised that permission is hereby granted, subject to the undermentioned conditions: -

- please provide our office with any pictures or documentation on the Champion Creek Property which you deem necessary for B.C. Hydro.

- any written reports on your findings pertaining to the Champion Creek Area.

For your record, the Champion Creek Cemetary should not be disturbed in any manner whatsoever.

Your co-operation on the above would be greatly appreciated.

Yours very truly,

S.W. Babakaiff
Administrator

SWB:nv

cc: Mr. Mike Semenoff

APPENDIX D

Reference material researched but not cited.

Baravalle, Richard V.E.

1977 Report on a survey of Lower Kootenay Pictographs. Kootenay Lake, B.C. Heritage Conservation Branch Ms. Victoria.

1978 Second report on a survey of Lower Kootenay Pictographs. Kootenay Lake, B.C. Heritage Conservation Branch Ms. Victoria.

1979 Third report on a survey of Lower Kootenay Pictographs. Kootenay Lake, B.C. Heritage Conservation Branch Ms. Victoria.

Blake, Michael T.

1981 Archaeological Investigations at the Wild Horse River - DjPv 14. Heritage Conservation Branch Occasional Papers No. 6. Victoria.

Bond, Rowland

1971 The Original Northwester, David Thompson, and the Native Tribes of North America. Spokane House Enterprises. Spokane.

Brandon, John

1979 Report of the 1979 Kootenay Heritage Impact Assessment Project. Part 1 : Results of Heritage Assessment in the Kootenay Region. Heritage Conservation Branch Ms. Victoria.

Brulotte, R.

1978 Report on East Kootenay Survey. Heritage Conservation Branch Ms.

Bussey, Jean

1977 Archaeological Investigations on the Pend D'Oreille River, South - Central British Columbia : Final Report 1977. Heritage Conservation Branch Ms. Victoria.

Chance, David

1973 Influences of the Hudson's Bay Company on the Native Cultures of the Colville District. Northwest Anthropological Research Notes, vol.7, no.1, pt.2. Moscow, Idaho.

Cox, Ross

1831 Adventures on the Columbia River. Smith and Co. London.

Douglas, David

1972 The Oregon Journals of David Douglas, etc. ed. by David Lavender. Oregon Book Society, Ashland.

Elmendorf, William

1965 Linguistic and geographic relations in the Northern Plateau Area. Southwestern Journal of Anthropology, v.21 (1) : 63-78.

French, Diana

1972 Nelson Archaeological Project. Results of the Investigation of a Stratified Campsite, DiQi 1, near Taghum, B.C. Heritage Conservation Branch Ms. Victoria.

Graham, Clara

1945 Fur and Gold in the Kootenays. Wrigley Printing Co. Vancouver.

Johnson, Kate

1951 Pioneer Days of Nakusp and the Arrow Lakes. Nakusp, B.C.

Jorgensen, Joseph

1969 Salish Language and Culture. Indiana University Press, Bloomington.

Malloff, M. and P. Ogloff (eds.)

1977 Toil and Peaceful Life : Portraits of Doukhobors. Sound Heritage, vol.VI, no.4. Victoria.

Mealing, F.M.

1975 Doukhobor Life. Cotinneh Books, Castlegar.

Mohs, Gordon

1977 Post Inundation : Archaeological Survey Studies of the Arrow Lakes. Heritage Conservation Branch Ms. Victoria.

Murton, P.

1973 Archaeological Survey of Proposed Hydro Generating Sites at Seven Mile (Pend Oreille R.), High Revelstoke (Columbia R.), and Site One (Peace R.). Heritage Conservation Branch Ms.

Ross, Alexander

1849 Adventures of the First Settlers on the Oregon or Columbia River. Smith, Elder and Company. London.

Smet, Pierre Jean de

1905 Life, Letters and Travels of Father Pierre Jean de Smet. ed. by H.M.Chittenden and A.T.Richardson. Kraus Reprint, N.Y. 1969.

Spier, Leslie (ed.)

1938 The Sinkaietk or Southern Okanagan of Washington. Contributions from the Laboratory of Anthropology 2, General Series in Anthropology No.6. Menasha.

Suttles, Wayne and William Elmendorf

1962 Linguistic Evidence for Salish Prehistory. American Ethnological Society, Annual Report. pp. 41-52.

Thompson, David

1962 David Thompson's Narrative, 1784 - 1812. ed. by Richard Glover, Champlain Society, Toronto.

Turnbull, Elsie G.

1964 Topping's Trail. Mitchell Press Ltd. Vancouver.

Turner, Nancy J.

1978 Food Plants of British Columbia Indians. Part 2. Interior Peoples. British Columbia Provincial Museum Handbook No. 36. Victoria, B.C.

1979 Plants in British Columbia Indian Technology. British Columbia Provincial Museum Handbook No. 38. Victoria, B.C.

Turney-High, Harry

1941 Ethnography of the Kutenai. Memoirs of the American Anthropological Association, no.56.

Webber, Harold

1975 People and Places. Cotinneh Books, Castlegar.

Welwood, Ron J. (ed.)

1976 Kootenaiana : a listing of books, government publications, journals, etc. relating to the Kootenay area. Selkirk College. Castlegar, B.C.

APPENDIX E

Checklist of Criteria for Archaeological Site Evaluation, from the Heritage Resource Management Division, Victoria.

CHECKLIST OF CRITERIA FOR ARCHAEOLOGICAL SITE EVALUATION

Scientific Significance

a) Does the site contain evidence which may substantively enhance understanding of culture history, past technological, socio-economic, and ideological systems, or other aspects of local and regional prehistory?

- internal stratification and depth
- chronologically sensitive cultural items
- materials for absolute dating
- association with ancient landforms
- quantity and variety of tool types
- distinct intra-site activity areas
- tool types indicative of specific socioeconomic or religious activity
- cultural features (burials, dwellings, hearths)
- diagnostic faunal and floral remains
- exotic cultural items or materials
- uniqueness and/or representativeness of the site
- condition of the site

b) Does the site suggest potential for experimentation at improving archaeological methods and techniques?

- monitoring impacts from artificial or natural agents
- site preservation/conservation experiments
- data recovery experiments
- sampling experiments
- intra-site spatial analysis

c) Can the site make substantive contributions to paleoenvironmental studies?

- topographical, geomorphological context
- depositional character
- diagnostic faunal, floral data

d) Does the site have potential to make important contributions to other scientific disciplines such as hydrology, geomorphology, pedology, meteorology, zoology, botany, forensic medicine, and environmental hazards research, or to industry including forestry and commercial fisheries?

Public Significance

a) Does the site have potential to serve the public in an interpretive, educational, or recreational capacity?

- condition of the site

- technical and economic feasibility of restoration or development for public use
- visibility of cultural features and their ability to be easily interpreted
- accessibility to the public
- opportunities for protection against vandalism
- representativeness and/or uniqueness of the site
- aesthetics of the local setting
- proximity to established recreation areas
- present and potential land use
- land ownership and administration
- legal/jurisdictional status
- local community attitude toward development

Ethnic Significance

a) Does the site or site locality presently have traditional, social, or religious importance to a particular group or community?

- ethnographic/ethnohistoric reference
- local community recognition of, and concern for site

Economic Significance

a) Does, or could, the site receive visitation or use by tourists and/or local residents including school groups?

b) What value of user-benefits may be placed on the site?

- visitors' willingness-to-pay
- visitors' travel costs

APPENDIX F

Glossary of Terms

ATLATL - a wooden shaft used as an extension of the arm to propel a spear or dart.

BURIN - a stone tool with a narrow chisel-like edge, used for carving bone, antler or wood.

CALCINED BONE - fragments of bone that show some change as a result of being burned or charred.

CELT - an earlier term used to denote an axe, adze or hoe blade made of stone. The term has generally gone out of use.

CHERT - a fine crystalline quartz that resembles flint, used for the manufacture of stone tools.

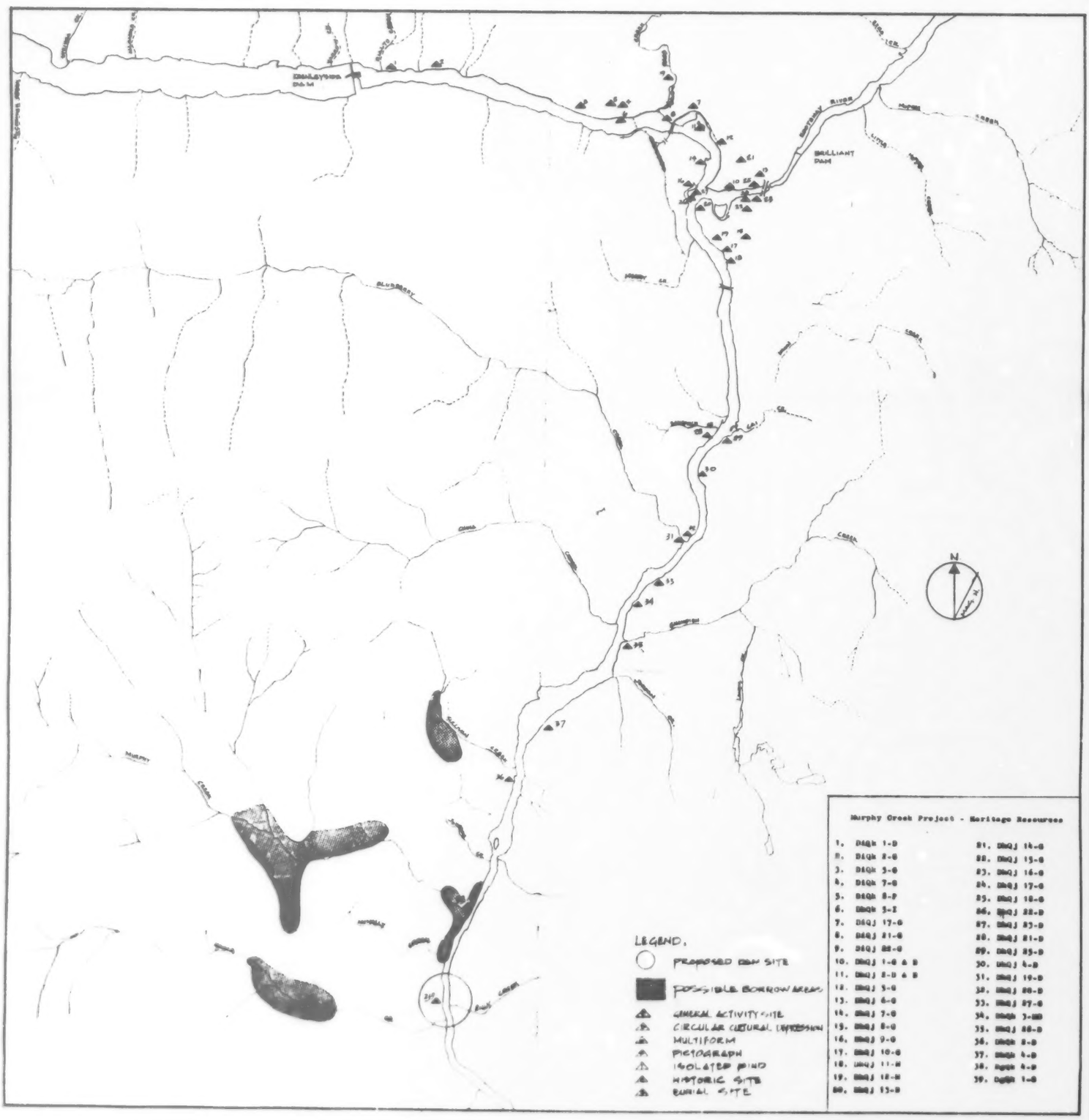
ETHNOGRAPHY - that part of cultural anthropology that emphasizes the description of particular cultures.

ETHNOHISTORY - the anthropological use of written historical material in preparing an ethnography.

ETHNOLOGY - that part of cultural anthropology that emphasizes explanation, interpretation, and hypothesis formation based upon information derived from ethnographies.

LANCEOLATE - term used to denote a large parallel sided stone point, usually the point would arm a spear or dart shaft.

MATRIX - in excavation the term is used to refer to the material in which artifacts may or may not occur.



MURPHY CREEK PROJECT HERITAGE RESOURCES

SCALE: 1 = 50,000

FIGURE 7